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IN THE CLAIMS

Complete listing of the claims:

1.   (Currently amended) A method for securely communicating information, comprising:

optically encrypting said information and storing the resulting encrypted data;

reading out the encrypted data in the spatial domain; ~~and~~

sampling the encrypted data to avoid overlap between adjacent data at a receiving

end:

converting said encrypted data to the temporal domain;

transmitting the converted encrypted data;

receiving the transmitted encrypted data and converting the received encrypted data

to the spatial domain ~~using threshold sampling to avoid overlap between adjacent data in the~~

~~transmitted encrypted data~~; ~~and~~

decrypting the converted received encrypted data to ~~recover~~ reconstruct said

information[[.]]; and

thresholding the resulting decrypted, reconstructed information to recover data lost

due to sampling the encrypted data.

2.   (Currently amended) The method as defined by claim 1, wherein said reading out the encrypted data in the spatial domain and converting the encrypted data to the temporal domain ~~is~~ are implemented using ultrafast laser pulses.

3.   (Currently amended) The method as defined by claim 1, wherein said reading out the

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encrypted data in the spatial domain and converting the encrypted data to the temporal

domain is-are implemented using ultrafast laser pulses spread in the spatial domain

according to their spectral components.

4.   (Original) The method as defined by claim 3, wherein said ultrafast pulses are spread

in the spatial domain by diffraction.

5.   (Currently amended) The method as defined by claim 2claim 1, wherein said

transmitting the converted data comprises transmitting said converted data over an optical

network.

6.   (Currently amended) The method as defined by claim 2claim 1, wherein said

converting received encrypted data to the spatial domain is implemented using ultrafast laser

pulses.

7.   (Currently amended) The method as defined by claim 2claim 1, wherein said optical

encryption includes random phase encryption.

8.   (Currently amended) The method as defined by claim 2, wherein said optical

encryption includes double random phase encryption.

9.   (Original) The method as defined by claim 8, wherein said double random phase

encryption includes phase encryption in the spatial domain and phase encryption in the

frequency domain.

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10.   (Currently amended) The method as defined by ~~claim 2~~claim 1, wherein said storing

of encrypted data comprises holographically storing said encrypted data.

11.   (Currently amended) The method as defined by ~~claim 2~~claim 1, wherein said reading

out and converting said encrypted data comprises:

      forming a real-time hologram using read-out encrypted data and a reference beam;

      reading out the real-time hologram; and

      converting the read-out hologram from the spatial domain to the temporal domain.

12.   (Previously presented) The method as defined by claim 11, wherein said reading out

the real-time hologram comprises directing a diffracted ultrafast laser pulse at said real time

hologram.

13.   (Previously presented) The method as defined by claim 5, wherein said reading out

and converting said encrypted data comprises:

      forming a real-time hologram using read-out encrypted data and a reference beam;

      reading out the real-time hologram; and

      converting the read-out hologram from the spatial domain to the temporal domain.

14.   (Previously presented) The method as defined by claim 13, wherein said reading out

the real-time hologram comprises directing a diffracted ultrafast laser pulse at said real time

hologram.

15.   (Currently amended) The method as defined by ~~claim 6~~claim 1, wherein said

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decrypting the converted received encrypted data includes phase decoding of said converted

received encrypted data.

16.   (Currently amended) The method as defined by ~~claim 6~~claim 1, wherein said

decrypting the converted received encrypted data includes phase decoding of said converted

received encrypted data in the spatial domain and in the frequency domain.

17-25. (Canceled)

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26.　　(Currently amended) Apparatus for securely communicating information, comprising:

　　means for optically encrypting said information and storing the resulting encrypted data;

　　means for reading out the encrypted data in the spatial domain;~~ and~~

　　means for sampling the encrypted data to avoid overlap between adjacent data at a receiving end;

　　means for converting said encrypted data to the temporal domain;

　　means for transmitting the converted encrypted data;

　　means for receiving the transmitted encrypted data and converting the received encrypted data to the spatial domain; and

　　means for decrypting the converted received encrypted data to ~~recover~~ reconstruct said information ~~using threshold sampling to avoid overlap between adjacent data in the converted encrypted data;~~ and

　　means for thresholding the resulting decrypted, reconstructed information to recover data lost due to sampling the encrypted data.

27.　　(Currently amended) Apparatus as defined by claim 26, wherein said means for receiving the transmitted encrypted data and means for converting the received encrypted data to the spatial domain ~~includes~~ include diffracted ultrafast laser pulses.

28.　　(Currently amended) Apparatus as defined by ~~claim 27~~ claim 26, wherein said means for optically encrypting includes means for implementing double random phase encryption.

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29.   (Currently amended) ~~For use in conjunction with a method for securely communicating information that includes the steps of: optically encrypting said information and storing the resulting encrypted data; reading out the encrypted data in the spatial domain, and converting said encrypted data to the temporal domain; and transmitting the converted encrypted data; a receiver subsystem~~A receiver subsystem for receiving securely communicated information, wherein the information is transmitted encrypted data in the temporal domain, comprising:

      means for receiving the transmitted encrypted data and converting the received encrypted data to the spatial domain; and

      means for decrypting the converted received encrypted data ~~to recover said information using threshold sampling to avoid overlap between adjacent data in the converted received encrypted data~~; and

      means for thresholding the resulting decrypted data to recover data lost due to sampling of the encrypted data.

30.   (Original) The receiver subsystem as defined by claim 29, wherein said means for receiving the transmitted encrypted data and converting the received encrypted data to the spatial domain includes diffracted ultrafast laser pulses.

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31.   (Currently amended) ~~For use in a method for securely communicating information, wherein said information has been optically encrypted and the resultant encrypted data has been stored~~A method for securely communicating information, wherein the information is stored encrypted data, the method comprising:

reading out the encrypted data in the spatial domain~~;, and~~

sampling the encrypted data to avoid overlap between adjacent data at a receiving

end;

converting said encrypted data to the temporal domain;

transmitting the converted encrypted data;

receiving the transmitted encrypted data and converting the received encrypted data

to the spatial domain; and

decrypting the converted received encrypted data to ~~recover~~reconstruct said

information ~~using threshold sampling to avoid overlap between adjacent data in the converted encrypted data~~; and

thresholding the resulting decrypted, reconstructed information to recover data lost

due to sampling the encrypted data.

32.   (Currently amended) The method as defined by claim 31, wherein said ~~step of~~ reading out the encrypted data in the spatial domain and converting the encrypted data to the temporal domain is implemented using ultrafast laser pulses.

33.   (Currently amended) The method as defined by claim 31, wherein said ~~step of~~ reading out the encrypted data in the spatial domain and converting the encrypted data to the temporal domain is implemented using ultrafast laser pulses spread in the spatial domain

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according to its spectral components.

34.   (Currently amended) The method as defined by claim 31, wherein said stored encrypted data comprises holographically stored encrypted data, and wherein said ~~step of~~ reading out and converting said encrypted data ~~includes~~include:

        forming a real-time hologram using read-out encrypted data and a reference beam;

        reading out the real-time hologram; and

        converting the read-out hologram from the spatial domain to the temporal domain.

35.   (Currently amended) The method as defined by claim 34, wherein said ~~step of~~ reading out the real-time hologram comprises directing a diffracted ultrafast laser pulse at said real time hologram.

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